

WHAT IS CLAIMED IS:

1. A work transferring and transporting apparatus, comprising:

5 a first transportation table which has a plurality of work holders for holding works on the peripheral edge portion thereof and rotates continuously;

a second transportation table which is located adjacent to and substantially flush with the first transportation table, has a plurality of work holders
10 for holding the works on the peripheral edge portion thereof, and continuously rotates in synchronism with the first transportation table; and

a work transfer section located between the first and second transportation tables, in which each work,
15 held in one of the work holders of the first transportation table, is transferred to one of the work holders of the second transportation table and transported by means of the second transportation table.

2. A work transferring and transporting apparatus
20 according to claim 1, wherein the first and second transportation tables transfer the works from the work holders of the first transportation table located on the upper-stream side with respect to the work transporting direction to the work holders of the
25 second transportation table on the lower-stream side.

3. A work transferring and transporting apparatus according to claim 1, wherein the first and second

transportation tables rotate in opposite directions around the centers of rotation thereof so that the respective work holders of the transportation tables move in the same direction in the work transfer section.

5 4. A work transferring and transporting apparatus according to claim 1, wherein each work holder of the first transportation table is in the form of an L-shaped recess having surfaces capable of holding each
10 work in a manner such that the work holder is inclined inside the transportation table at an angle greater than 0° and narrower than 45° to a line tangent to the trajectory of the transportation table on the front side with respect to the rotating direction.

15 5. A work transferring and transporting apparatus according to claim 1, wherein each work holder of the second transportation table is in the form of an L-shaped recess having surfaces capable of holding each
20 work in a manner such that the work holder is inclined inside the transportation table at an angle greater than 0° and narrower than 45° to a line tangent to the trajectory of the transportation table on the rear side with respect to the rotating direction.

25 6. A work transferring and transporting apparatus according to claim 1, wherein the respective work holders of the first and second transportation tables are situated symmetrically with respect to a point in

the work transfer section.

7. A work transferring and transporting apparatus according to claim 4, wherein a suction port connected to a negative pressure source is formed in a corner
5 portion of the L-shaped recess of each work holder of the first transportation table.

8. A work transferring and transporting apparatus according to claim 5, wherein a suction port connected to a negative pressure source is formed in a corner
10 portion of the L-shaped recess of each work holder of the second transportation table.

9. A work transferring and transporting apparatus according to claim 1, wherein each work holder of the first transportation table is in the form of an
15 L-shaped recess having surfaces capable of holding each work in a manner such that the work holder is inclined inside the transportation table at an angle greater than 0° and narrower than 45° to a line tangent to the trajectory of the transportation table on the front
20 side with respect to the rotating direction, that each work holder of the second transportation table is in the form of an L-shaped recess having surfaces capable of holding each work in a manner such that the work holder is inclined inside the transportation table at
25 the angle greater than 0° and narrower than 45° to a line tangent to the trajectory of the transportation table on the rear side with respect to the rotating

direction, and that a line which connects the center of rotation of the first transportation table and a corner portion of the L-shaped recess of the work holder of the first transportation table and a line which connects the center of rotation of the second transportation table and a corner portion of the L-shaped recess of the work holder of the second transportation table are spaced and extend parallel to each other in the work transfer section.

10 10. A work transferring and transporting apparatus according to claim 1, wherein the respective work holders of the first and second transportation tables are formed individually having suction ports, the suction ports being connected with a negative pressure source, which generates a negative pressure lower than the atmospheric pressure, through switching means capable of switching pressure.

15 11. A work transferring and transporting apparatus according to claim 10, wherein the switching means is a selector valve which changes pressure between the atmospheric pressure and a negative pressure lower than the atmospheric pressure.

20 12. A work transferring and transporting apparatus according to claim 10, wherein the switching means is a selector valve which changes pressure between a negative pressure lower than the atmospheric pressure and a positive pressure higher than the atmospheric

pressure.

13. A work transferring and transporting method comprising:

5 a step of attracting a work to a work holder on the peripheral edge portion of a rotating first transportation table under a negative pressure lower than the atmospheric pressure and transporting the work;

10 a step of canceling the negative pressure in the work holder of the first transportation table, thereby disengaging the work from the work holder of the first transportation table, in a work transfer section located between the first and second transportation tables; and

15 a step of attracting the work disengaged from the first transportation table to the work holder of the second transportation table under a negative pressure lower than the atmospheric pressure, thereby transferring the work to the second transportation
20 table, and transporting the work by means of the second transportation table.

14. A work transferring and transporting method according to claim 13, wherein the negative pressure in the work holder of the first transportation table is
25 canceled to allow the work disengaged from the work holder to be transferred to the work holder of the second transportation table by means of a centrifugal

force generated as the first transportation table rotates.

15. A work transferring and transporting method according to claim 13, wherein a positive pressure
5 higher than the atmospheric pressure is applied to the work holder of the first transportation table when the work is disengaged from the work holder.